WHAT IS CLAIMED IS:

1/ A turbomachine comprising a combustion chamber and a high pressure shaft, said shaft presenting upstream from said chamber an axial compressor of axis X for delivering air to said chamber, and downstream from said chamber, a turbine receiving hot gas from said chamber for rotating the rotor of said compressor, said compressor having a plurality of compression stages, each stage presenting a ring of stationary blades secured to a casing and a ring of moving blades projecting radially from the periphery of a disk of said rotor, said turbomachine further comprising an electricity generator coaxial with said body and having a field magnetic circuit constrained to rotate with said rotor and a secondary magnetic circuit secured to said casing, the field magnetic circuit being mounted in the bore of at least one disk of said compressor and surrounding the secondary magnetic circuit, and the generator being configured to operate as a starter of said turbomachine,

wherein the compressor includes at least one disk carrying moving blades of large chord, and the field magnetic circuit is mounted in the bore of said disk.

2/ A turbomachine comprising a combustion chamber and a high pressure shaft, said shaft presenting upstream from said chamber an axial compressor of axis X for delivering air to said chamber, and downstream from said chamber, a turbine receiving hot gas from said chamber for rotating the rotor of said compressor, said compressor having a plurality of compression stages, each stage presenting a ring of stationary blades secured to a casing and a ring of moving blades projecting radially from the periphery of a disk of said rotor, said turbomachine further comprising an electricity generator coaxial with said body and having a field magnetic circuit constrained to rotate with said rotor and a secondary magnetic circuit secured to said casing,

wherein the field magnetic circuit is mounted in the bore of disks of two consecutive stages of the compressor.

3/ A turbomachine according to claim 1, further comprising a low pressure shaft having a low pressure compressor disposed upstream from the high pressure shaft, and a low pressure turbine disposed downstream from the high pressure shaft for rotating the rotor of said low pressure compressor, the compressor comprising a plurality of compression stages each presenting a ring of stationary blades and a ring of moving blades which project radially from the periphery of a disk of said rotor,

the turbomachine further comprising an auxiliary electricity generator having a field magnetic circuit mounted in the inside bore of at least one disk of the low pressure compressor.

4/ A turbomachine according to claim 1, wherein the secondary magnetic circuit is mounted around a cylindrical shroud provided on the support structure for supporting a bearing of the corresponding compressor.

5/ A turbomachine according to claim 4, wherein the cylindrical shroud is of a diameter greater than the diameter of the outer ring of the bearing.